# EAST Search History

## EAST Search History (Prior Art)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L7 | 2 | (electron near1 (emiss$3 emit$3)) with (n$dop$3 with diamond) | EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 15:11 |
| L11 | 14 | ("5541423").URPN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | OFF | 2011/03/02 15:37 |
| L12 | 9316 | (semiconductor with (emit $4 emission)) and cathode and dop$4 and "n" and "p" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 15:38 |
| L13 | 4447 | L12 and @ad< "20040915" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 15:39 |
| L14 | 1130 | L13 and ("Field emission" "field emitter" "FED" "electron emitter" "electron emission") | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 15:42 |
| L15 | 1 | ("3581151").PN. | US-PGPUB; USPAT | OR | OFF | 2011/03/02 15:51 |
| L16 | 30 | ("Field emission" "field emitter" "FED" "electron emitter" "electron emission" "cold cathode") with ("PN junction" with light) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 15:53 |
| L17 | 787 | ("Field emission" "field emitter" "FED" "electron emitter" "electron emission" "cold cathode") and ("PN junction" with light) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 15:56 |

| L18 | 757 | L17 not l16 | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 15:57 |
| L19 | 454 | L18 and @ad< "20040915" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 15:59 |
| L20 | 5081 | ("Field emission" "field emitter" "FED" "electron emitter" "electron emission" "cold cathode") and (junction with light) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 16:14 |
| L21 | 8 | ("5146296" \| "5596186" \| "6541836" \| "6762473"). PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 17:16 |
| L22 | 21462 | ("Field emission" "field emitter" "FED" "electron emitter" "electron emission" "cold cathode") and ("PN junction" with light or photon) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 17:18 |
| L23 | 1314 | ("Field emission" "field emitter" "FED" "electron emitter" "electron emission" "cold cathode") with ("PN junction" with light or photon) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 17:18 |
| L24 | 1177 | L23 not 20 | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 17:18 |
| L25 | 1177 | L24 not l18 | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 17:19 |

| L26 | 723 | L25 and @ad<"20040915" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 17:19 |
|-----|-----|------------------------|---------------------------------------------------------|----|-----|---------------------|
| L27 | 14 | ("4331505" \| "4728851" \| "5138220" \| "5262649" \| "5543684" \| "5693947" \| "5780858" \| "5780960" \| "5821680" \| "6211608" \| "6362484" \| "6384400"). PN. OR ("6570165").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/02 17:51 |
| L28 | 61 | ("4627008" \| "4874981" \| "5042058" \| "5335258" \| "5444242" \| "5563929" \| "5602894" \| "5717204" \| "5742658" \| "6259765"). PN. OR ("6333968").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/02 18:04 |
| L29 | 22460 | ("Field emission" "field emitter" "FED" "electron emitter" "electron emission" "cold cathode") with ("illumination source" "light source" light $emitting light$emission) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 18:28 |
| L30 | 1046 | ("Field emission" "field emitter" "FED" "electron emitter" "electron emission" "cold cathode") with ("illumination source" "light source" light $emitting light$emission) same (junction alliance assemblage joining union reunion combination) same (light photon) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 18:31 |
| L31 | 297 | L30 and @ad<"20040915" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 18:31 |
| L32 | 2597 | ((313/495-497,311)or (445/24-25)).ccls. and ("illumination source" "light source" light $emitting light$emission) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 18:43 |

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|---|---|---|---|---|---|---|
| L33 | 201 | ((313/495-497,311)or (445/24-25)).ccls. and ("illumination source" "light source" light $emitting light$emission) with (junction alliance assemblage joining union reunion combination) same (light photon) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 18:44 |
| S608 | 7536 | ((313/495-497)or(445/24-25)).ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 16:59 |
| S609 | 4134 | S608 and (junct$3 attachment assemblage bond combinat$3 combine) | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 17:01 |
| S610 | 4248 | S608 and (junct$3 attachment assemblage bond combinat$3 combine joint) | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 17:01 |
| S611 | 2506 | S610 and @ad<"20040915" | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 17:02 |
| S612 | 2213 | (313/311).ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 17:59 |
| S613 | 573 | S612 and @ad<"20040915" | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 17:59 |
| S614 | 7 | ("5463271" \| "5541423" \| "5541423" \| "5888113" \| "6204597" \| "6267637" \| "6379210" \| "6445114" \| "6445114").PN. | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 18:01 |
| S615 | 38 | ("5463271").URPN. | USPAT | OR | OFF | 2011/03/01 18:02 |
| S616 | 17 | ("5463271" \| "5703435" \| "5821680" \| "5852303" \| "5908699" \| "6127773" \| "6274881" \| "6376123" \| "6472814" \| "6554673").PN. OR ("6861790").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/01 20:56 |
| S617 | 76 | ((natsuo near tatsumi)or (yoshiki near nishibayashi) or(takhiro near imai)).in. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/01 21:02 |
| S618 | 13 | ("20030089912" \| "20040056580" \| "20040238809" \| "20050042743" \| "20050062389" \| "20050133735" \| "20050174030" \| "20050200261" \| "5341063" \| "5602439" \| "5844252" \| "6538368" \| "7307377").PN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/01 21:04 |

| S619 | 12 | ("3581151" \| "5199918" \| "5410166" \| "5656883" \| "5679895" \| "5844252" \| "6132278" \| "6465941" \| "6762543" \| "6876136"). PN. OR ("7307377").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/01 21:07 |
|---|---|---|---|---|---|---|
| S620 | 35 | ("2960659" \| "3105166" \| "3150282" \| "3184659" \| "3214629" \| "3264533"). PN. OR ("3581151").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/01 21:14 |
| S621 | 12 | ("3581151" \| "5199918" \| "5410166" \| "5656883" \| "5679895" \| "5844252" \| "6132278" \| "6465941" \| "6762543" \| "6876136" \| "7307377").PN. OR ("7710013").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/01 21:27 |
| S622 | 1 | ("20040056580").PN. | US-PGPUB; USPAT | OR | OFF | 2011/03/01 21:32 |
| S623 | 2213 | (313/311).ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 21:38 |
| S624 | 7536 | ((313/495-497)or(445/24-25)).ccls. | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 21:41 |
| S625 | 68 | S624 and (diamond with (emit$4 emiss$3)) and (dop$3 with (n$typ "n")) and (dop$3 with (p$type "p")) | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 21:44 |
| S626 | 12 | ("3581151" \| "5199918" \| "5410166" \| "5656883" \| "5679895" \| "5844252" \| "6132278" \| "6465941" \| "6762543" \| "6876136" \| "7307377").PN. OR ("7710013").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/01 21:45 |
| S627 | 23 | ("3581151").URPN. | USPAT | OR | OFF | 2011/03/01 21:46 |
| S628 | 12 | ("3466485" \| "3497929" \| "5150019" \| "5557160"). PN. OR ("5717278").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/01 22:02 |
| S629 | 134 | "313"/$.ccls. and (diamond with (emit$4 emiss$3)) and (dop$3 with (n$typ "n")) and (dop$3 with (p$type "p")) | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 22:07 |
| S630 | 77 | S629 not S625 | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 22:07 |

| S631 | 7 | ("20040056580" \| "20040095051" \| "5289086" \| "5552613" \| "5844252" \| "6184611" \| "6267637").PN. OR ("7737614").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/01 22:12 |
|------|-----|-------------------------------------------------------|------------------------|----|-----|------------------|
| S632 | 635 | (diamond with (emit$4 emiss$3)) and (dop$3 with (n$typ "n")) and (dop$3 with (p$type "p")) | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 22:16 |
| S633 | 339 | S632 and @ad< "20040915" | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 22:17 |
| S634 | 290 | S633 not S630 | US-PGPUB; USPAT; USOCR | OR | ON | 2011/03/01 22:18 |
| S635 | 10 | ("5670788").URPN. | USPAT | OR | OFF | 2011/03/01 22:29 |
| S636 | 21 | ("5063421" \| "5117267" \| "5124779" \| "5132749" \| "5144380" \| "5243199" \| "5285078").PN. OR ("5541423").URPN. | US-PGPUB; USPAT; USOCR | OR | OFF | 2011/03/01 22:30 |
| S637 | 1 | ("20090212703").PN. | US-PGPUB; USPAT | OR | OFF | 2011/03/01 22:49 |
| S638 | 1 | ("20080284313").PN. | US-PGPUB; USPAT | OR | OFF | 2011/03/01 22:58 |
| S639 | 6 | (("20060244352") or ("3581151") or ("20020031931") or ("6958571") or ("20050042743") or ("20040056580")).PN. | US-PGPUB; USPAT | OR | OFF | 2011/03/02 11:13 |
| S640 | 3 | ("6958571").URPN. | USPAT | OR | OFF | 2011/03/02 11:25 |
| S641 | 11521 | (sumitomo near electric near industries).as. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 11:27 |
| S642 | 5 | S641 and (FED ("field emitter device" "electron emission")) with (PN schottky) same (junction) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 11:28 |
| S643 | 2 | "11154455" | EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 11:35 |

| S644 | 19 | ("3581151" | "5199918" | "5410166" | "5656883" | "5679895" | "5844252" | "6132278" | "6465941" | "6762543" | "6876136"). PN. | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 11:37 |
|---|---|---|---|---|---|---|
| S645 | 197 | (FED ("field emitter device" "electron emission")) with (PN schottky) same (junction) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 11:42 |
| S646 | 18211 | (FED ("field emitter device" "electron emission") diode) with (PN schottky) same (junction) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 11:55 |
| S647 | 3295 | (FED ("field emitter device" "electron emission") diode light $emitting light$emission) with (PN schottky) same (junction) same (light) | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 11:55 |
| S648 | 1995 | S647 and @ad< "20040915" | US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB | OR | ON | 2011/03/02 11:56 |
| S649 | 1 | ("20020096994").PN. | US-PGPUB; USPAT | OR | OFF | 2011/03/02 13:31 |
| S650 | 21 | ("2002/0096994").URPN. | USPAT | OR | OFF | 2011/03/02 13:35 |

## EAST Search History (Interference)

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|---|---|---|---|---|---|---|
| L8 | 542 | (diamond with (emit$4 emiss $3 cathode)) and crystal and dop$4 and "n" and "p" | USPAT; UPAD | OR | ON | 2011/03/02 15:14 |
| L9 | 411 | L8 and @ad< "20040915" | USPAT; UPAD | OR | ON | 2011/03/02 15:14 |
| L10 | 14 | ("5541423").URPN. | USPAT | OR | OFF | 2011/03/02 15:34 |

**3/2/2011 6:50:33 PM**
**C:\ Documents and Settings\ ebreval\ My Documents\ EAST\ Workspaces\ 12178062.wsp**